

NPOESS

TODAY: Evolution

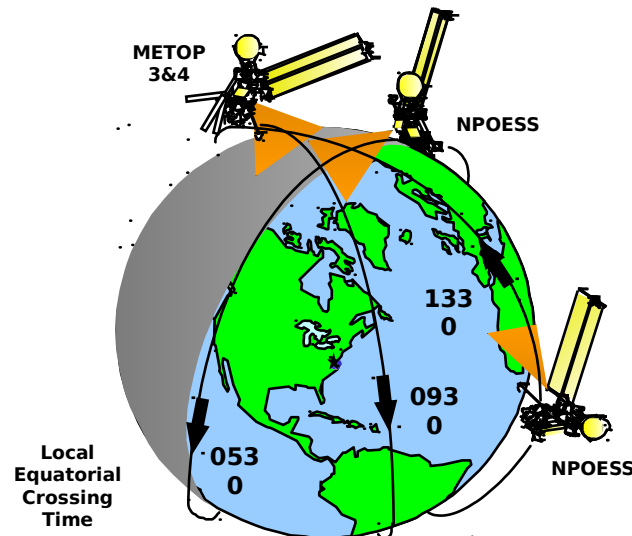
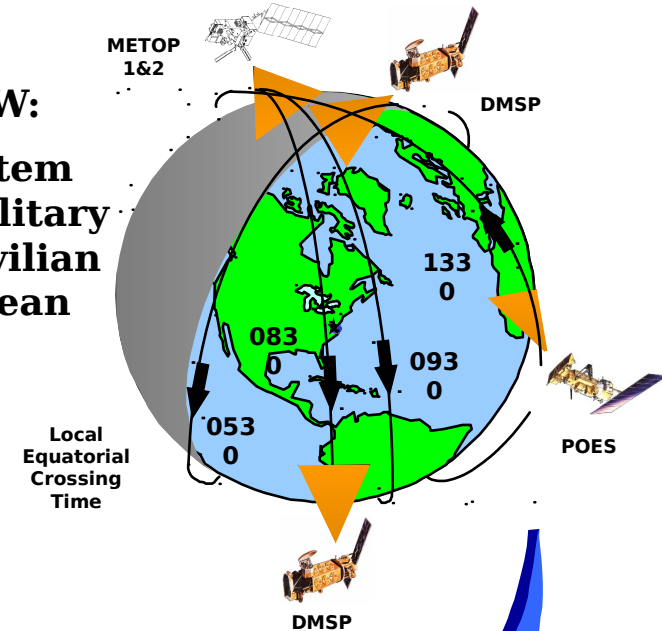
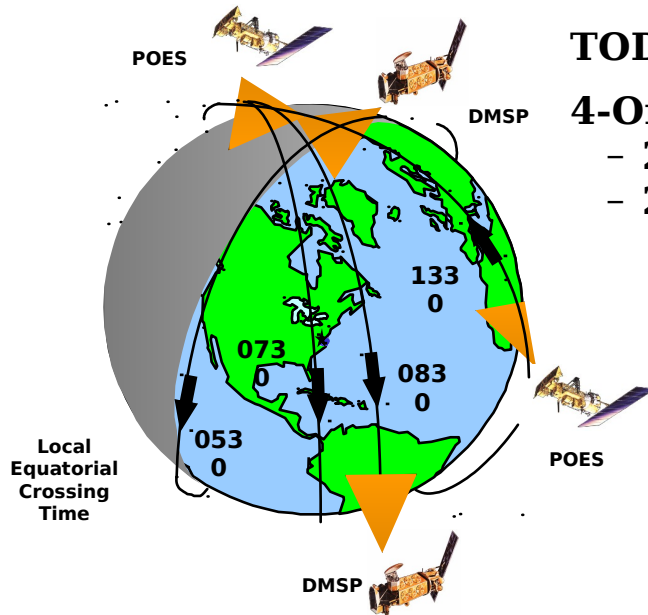
4-Orbit System

- 2 US Military
- 2 US Civilian

TOMORROW:

4-Orbit System

- 2 US Military
- 1 US Civilian
- 1 European



Reduced number of satellite orbits, combined with longer life satellites, reduces number of US satellites by 50% over life of program!

FUTURE:

3-Orbit System

- 2 US Converged
- 1 European

NPOESS Requirements

*Convergence
of Alternatives* →

Integrated Operational Requirements Document (IORD- I)

- 61 Data Products
- 9 Enhancement Data Products

Validated by:

- Deputy Undersecretary of
Commerce for Oceans &
Atmosphere
- Vice Chairman of Joint Chiefs of
Staff
- NASA Associate Administrator for
Earth Science Enterprise

*Convergence of
Requirements* →

***Converged requirements provide foundation for combined program
First success after eight previous attempts***

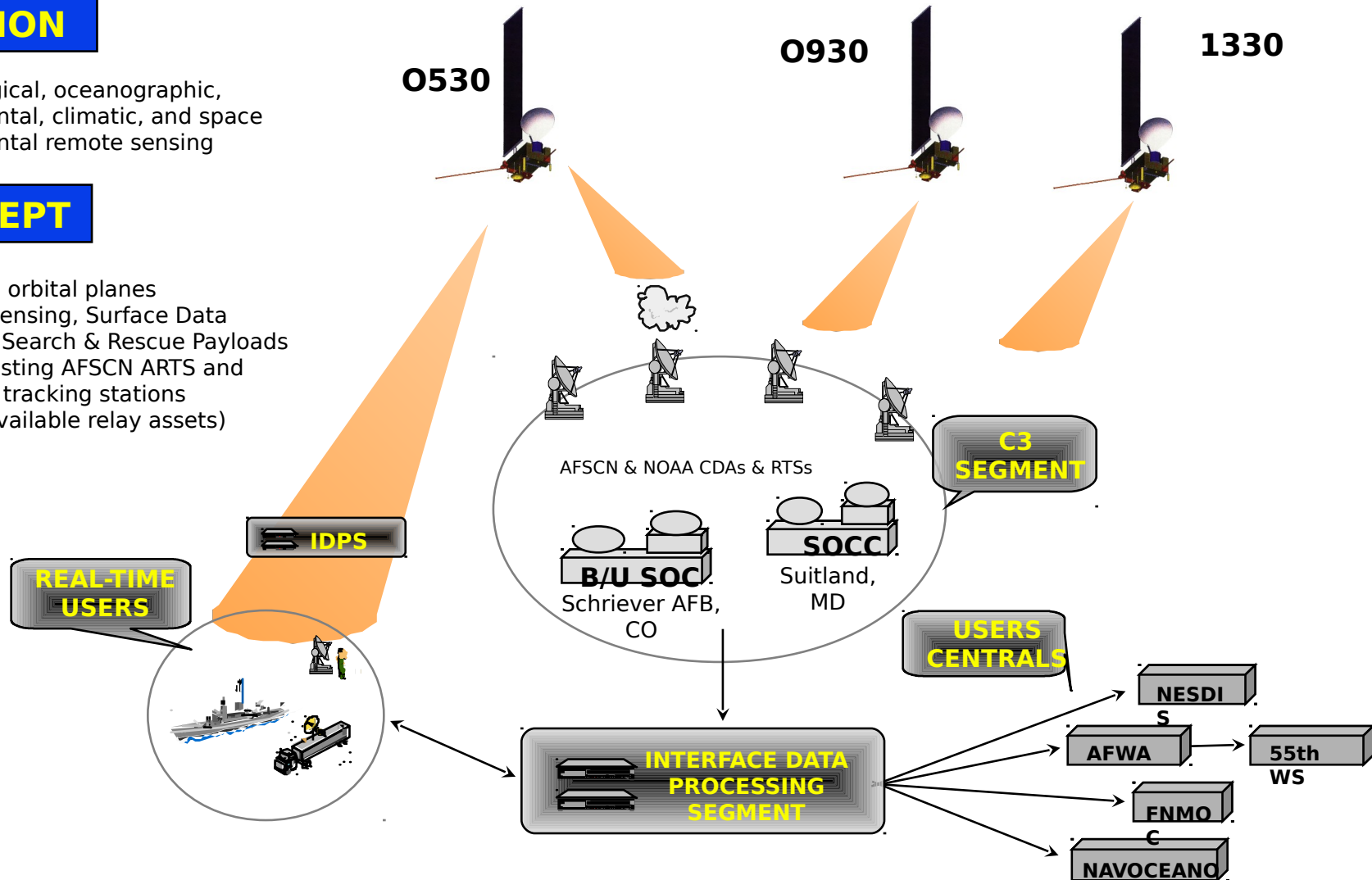
NPOESS Notional System Architecture

MISSION

Meteorological, oceanographic, environmental, climatic, and space environmental remote sensing

CONCEPT

- 3 or more orbital planes
- Remote Sensing, Surface Data Collection, Search & Rescue Payloads
- Utilize existing AFSCN ARTS and NOAA CDA tracking stations (or other available relay assets)



IOD-1 EDRS Addressed by

NPOESS Baseline

- **Atmos Vertical Moisture Profile *** • Longwave Rad (Surface)
- **Atmos Vertical Temp Profile *** • Electric Field
- **Imagery *** • Electron Den Profiles/Ionospheric Spectra
- **Sea Surface Temperature *** • Fresh Water Ice
- **Sea Surface Winds *** • Geomagnetic Field
- **Soil Moisture *** • Ice Surface Temperature
- Aerosol Optical Thickness • In-situ Ion Drift Velocity
- Aerosol Particle Size • In-situ Plasma Density
- Albedo (Surface) • In-situ Plasma Fluctuations
- Auroral Boundary • In-situ Plasma Temperature
- Auroral Imagery • Insolation
- Cloud Base Height • Ionospheric Scintillation
- Cloud Cover/Layers • Land Surface Temperature
- Cloud Effective Particle Size • Littoral Sediment Transport
- Cloud Ice Water Path • Net Heat Flux
- Cloud Liquid Water • Net Short Wave Rad (TOA)
- Cloud Optical Depth/Transmittance • Neutral Den Profiles/Neutral Atmosphere
- Cloud Top Height • Normalized Difference Veg Index
- Cloud Top Pressure • Ocean Color/Chlorophyll
- Cloud Top Temperature • Ocean Wave Characteristics
- Currents (Ocean) • Ozone Total Column/Profile
- Precipitable Water
- Precipitation Type/Rate
- Pressure (Surface/Profile)
- Rad Belt/Low Energy Solar Particles
- Sea Ice Age and Edge Motion
- Sea Surface Hgt/Topography
- Snow Cover/Depth
- Solar EUV Flux
- Solar Irradiance
- Solar/Gal Cosmic Ray Particles
- Supra - Thermal - Auroral Particles
- Surface Wind Stress
- Suspended Matter
- Total Auroral Energy Deposition
- Total Longwave Rad (TOA)
- Total Water Content
- Turbidity
- Upper Atmospheric Airglow
- Vegetation Index/Surface Type

***Key parameters**